

## Assessment

Description of the task---.Written test/ Multiple choice/Essay

**Teacher: Mr. Nizar**

**Subject: Science**

**Type of task: Individual**

**Time: 1:30 hours.**

**Task Condition: the students will have to solve all the questions in the worksheet given to them.**

**The students will be asked questions on the topics mentioned below.**

**They will be using the Scientific method and the scientific writing.**

**The task will be assessed on the basis of following criteria: -**

- **Criterion A-Knowing and understanding**

Name of the student\_\_\_\_\_

Grade\_\_\_\_\_

## Assessment

***Criterion A: Knowing and understanding***

Maximum 8

Achievement Level	General Descriptor	Task specific clarifications
0	The student does not reach a standard described by any of the descriptors given below.	The student does not reach a standard described by any of the descriptors given below.
1-2	Selects scientific knowledge <b>Select</b> scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b> Apply information to <b>make judgments, with limited success.</b>	Selects scientific knowledge on the scientific method and living things. <b>Select</b> scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b> Apply information to <b>make judgments, with limited success.</b>
3-4	<b>Recall</b> scientific knowledge Apply scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b> Apply information to <b>make judgments.</b>	<b>Recall</b> scientific knowledge on the scientific method and living things. Apply scientific knowledge and understanding to <b>suggest solutions</b> to problems set in <b>familiar situations</b> Apply information to <b>make judgments.</b>
5-6	<b>State</b> scientific knowledge Apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b> Apply information to <b>make scientifically supported judgments.</b>	<b>State</b> scientific knowledge on the scientific method and living things. Apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar situations</b> Apply information to <b>make scientifically supported judgments.</b>
7-8	<b>Outline</b> scientific knowledge Apply scientific knowledge and understanding to <b>solve problems</b> set in <b>familiar</b>	<b>Outline</b> scientific knowledge on the scientific method and living things. Apply scientific knowledge and understanding to <b>solve problems</b> set in

## Assessment

	<b>situations and suggest solutions</b> to problems set in <b>unfamiliar situations</b> <b>Interpret</b> information to <b>make scientifically supported judgments.</b>	<b>familiar situations and suggest solutions</b> to problems set in <b>unfamiliar situations</b> <b>Interpret</b> information to <b>make scientifically supported judgments.</b>
--	--	---

Achievement level	Descriptor

## Assessment

2. Two pupils planted lettuce seeds at three different temperatures. They planted the same number of seeds at each temperature.



Their results are shown in the table.

temperature, in °C	total number of lettuce seeds germinated					
	day 1	day 2	day 3	day 4	day 5	day 6
5	0	0	-----	0	1	1
15	0	0	0	1	5	9
25	0	2	8	13	17	19

- (a) Complete the table to show how many seeds had germinated at 5°C by day 3.

1 mark

- (b) The pupils were trying to find out something about seeds.

Write down the question the pupils were investigating.

1 mark

---

---

## Assessment

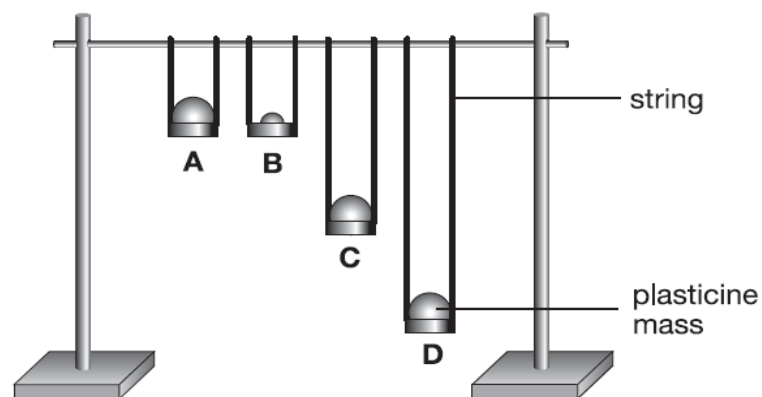
18. Joe saw two types of swing in the park.



He noticed that the time for one complete swing, forward and back, was different for the two types of swing.

He did **not** know whether the length of the chains or the mass of the person affected the time for one complete swing.

He made model swings and measured how long it took for 10 complete swings in 4 investigations.



Here are his results.

	investigation			
	A	B	C	D
length of string, in cm	25	25	50	75
mass of plasticine, in g	100	50	100	100
time for 10 complete swings, in s	10.0	10.0	14.2	17.4

## Assessment

Here is Joe's conclusion:



Changing the mass of the plasticine has no effect on the time taken for 10 complete swings.

- (a) Which **two** of his investigations, A, B, C or D, provided evidence to support his conclusion?

\_\_\_\_\_ and \_\_\_\_\_

1 mark

- (b) Look at the results table.

- (i) Describe how the length of the string affects the time for 10 complete swings.

1 mark

\_\_\_\_\_  
\_\_\_\_\_

- (ii) Which **three** of his investigations are best evidence for this?

\_\_\_\_\_ and \_\_\_\_\_ and \_\_\_\_\_

1 mark

- (c) Use his previous table of results to predict the times for 10 complete swings in two further investigations, E and F. Write your answers in the table below.

1 mark

	investigation	
	E	F
length of string, in cm	25	100
mass of plasticine, in g	25	100
time for 10 complete swings, in s	-----	-----

## Assessment

- (c) John and Sarah then counted the number of pupils who can and **cannot** roll their tongues.  
What method did they use to collect their data?  
Tick the correct box.

Observe pupils' tongues.

☐

Look at books.

☐

Identify factors to keep the same.

☐

Measure pupils' tongues.

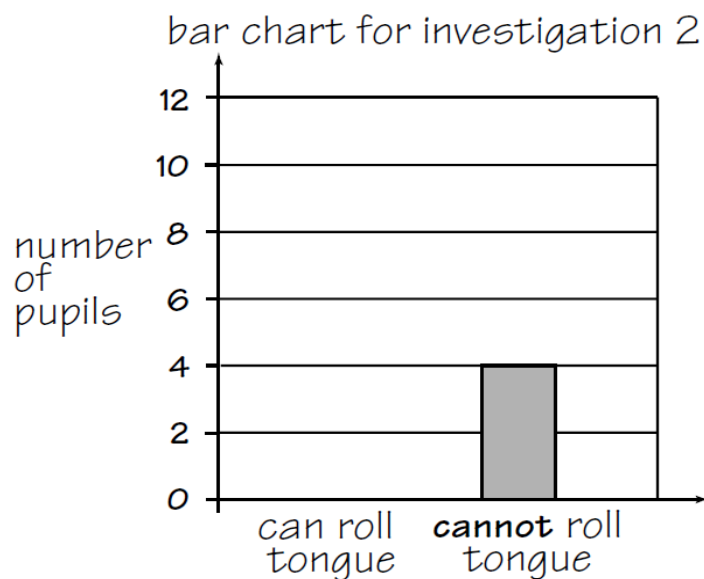
☐

- (d) They recorded their results in a table.

results for investigation 2

can roll tongue	<b>cannot</b> roll tongue
10	4

Draw a bar on the chart below to show how many pupils can roll their tongues.



- (e) Look at their **bar charts** for investigations 1 and 2.  
How can you tell that they used different numbers of pupils in each investigation?

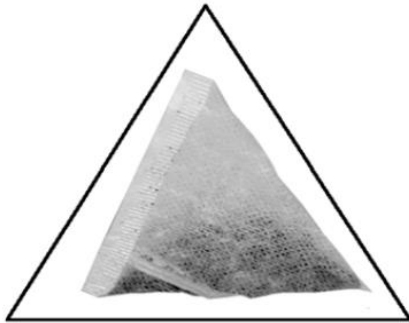
---



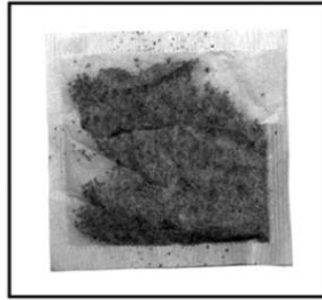
---

## Assessment

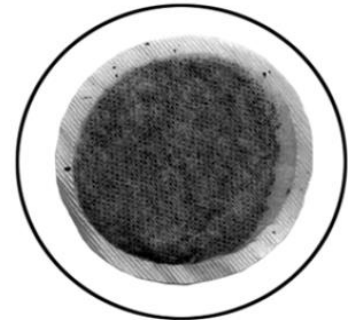
6. Tea bags are made in different shapes.



triangle



square



circle

Some pupils want to find out which shape of tea bag lets tea dissolve most quickly.

They make two plans for their investigation as shown below.

**FIRST PLAN**

We will use 3 tea bags and 3 beakers.

**SECOND PLAN**

Collect three beakers.

Collect three different tea bags.

Put one tea bag in each beaker.

Add 150 cm<sup>3</sup> of water at 65°C.

Keep the temperature of the water the same.

Measure the time taken for the tea to dissolve.

Find out which is the quickest for making tea.

- (a) How is the second plan better than the first plan?

---

---

- (b) Why should they take care when they add hot water at 65°C to the tea bags?

---

---



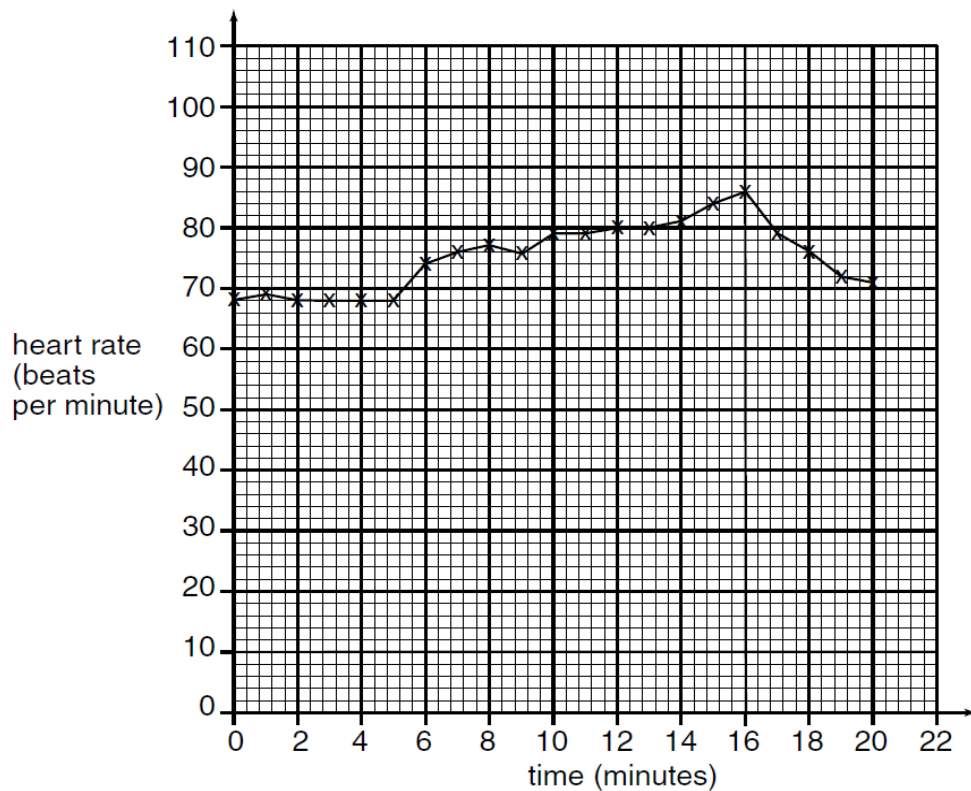
**Assessment**

11. Harry investigated the effects of fizzy cola drink on his heart rate.

First he measured his heart rate every minute for 5 minutes when sitting down. Then he drank some cola.

He continued to measure his heart rate at regular intervals.

This is a graph of his results.



- (a) Why did Harry measure his heart rate every minute for 5 minutes before drinking his cola?

---

---

- (b) Harry says cola affects his heart rate.

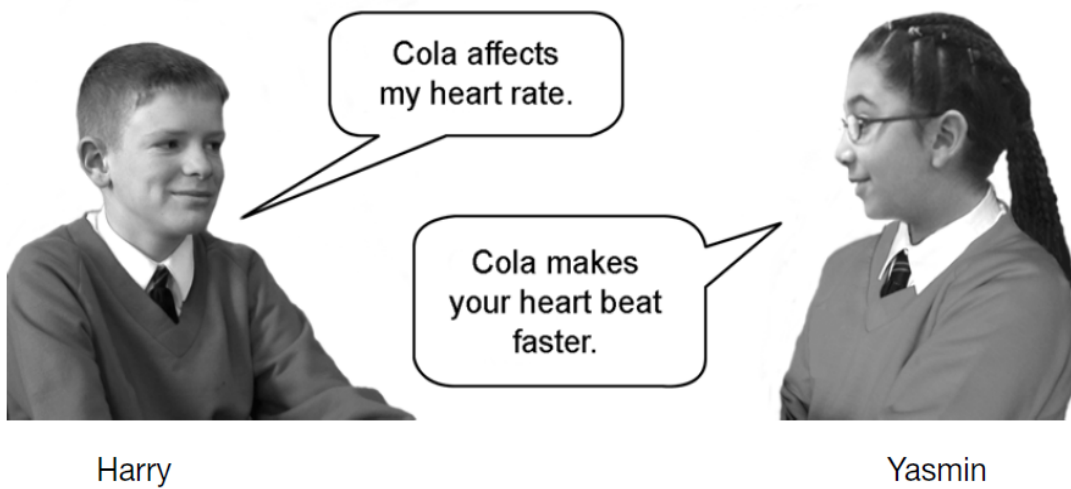
What evidence is there in the graph to support his idea that cola affects his heart rate?

---

---

**Assessment**

- (c) Harry and Yasmin came to the following conclusions.



Explain why Yasmin's conclusion is better than Harry's conclusion.

---

---

- (d) Yasmin said, "We should also measure Harry's heart rate after he drinks fizzy water".

How would measuring Harry's heart rate after he drinks fizzy water improve the investigation?

---

---

## Assessment

5. Emma and Philip wanted to see if changing the temperature of the water affected the time taken for a cold cure powder to dissolve in water.



Philip recorded their results.

Water at 40°C took 74 seconds.  
20°C took 144 seconds.  
It took 34 seconds for water  
at 57°C.

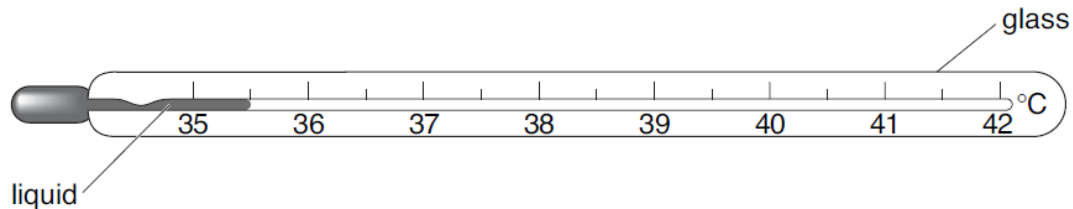
- (a) (i) Write the heading for the first column in the table below.

_____ (°C)	time to dissolve (s)

- (ii) Write their results correctly in the table above.

## Assessment

3. The thermometer drawn below can be used to measure the temperature of the human body.



- (b) Give the names of **two** pieces of measuring equipment they would need.

1. \_\_\_\_\_

2. \_\_\_\_\_

- (c) Why did they put the same amount of water in each beaker?

\_\_\_\_\_  
\_\_\_\_\_

- (d) Emma wrote, 'My investigation was good', as her conclusion.

Philip said this was **not** a scientific conclusion.

Explain why Emma's conclusion is **not** scientific.

\_\_\_\_\_  
\_\_\_\_\_

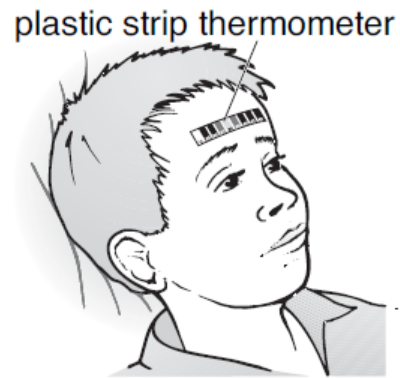
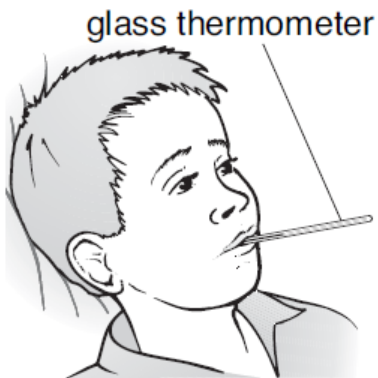
- (e) Look at their results on the opposite page.

Write a scientific conclusion for their investigation.

\_\_\_\_\_  
\_\_\_\_\_

**Assessment**

A nurse can measure a child's temperature with two different thermometers as shown below.



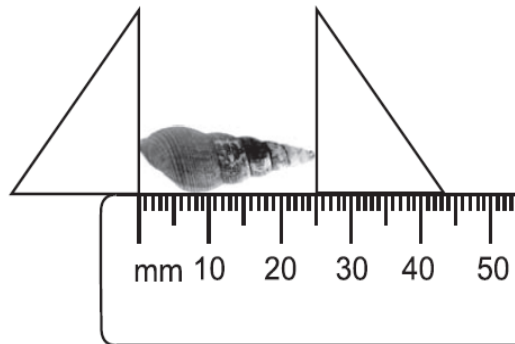
Give **one** reason why it is safer to use a plastic strip thermometer than a glass thermometer.

---

---

## Assessment

2. Jay collected pond snails from the school pond.  
He measured the lengths of all their shells.



- (a) What is the length of the shell above?

\_\_\_\_\_ mm

- (b) Jay made a tally chart of the lengths of **all** the shells he found.

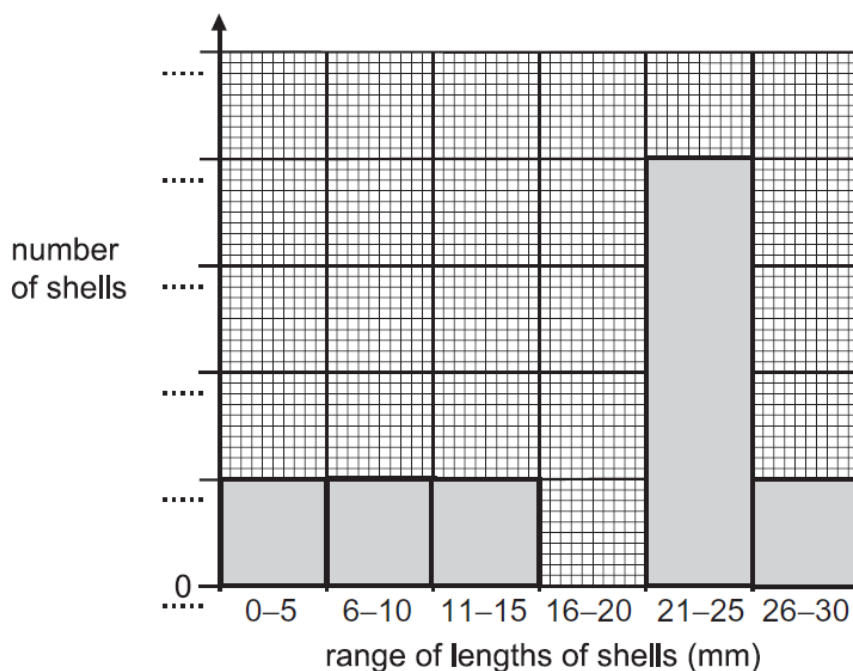
range of lengths of shells (mm)	0-5	6-10	11-15	16-20	21-25	26-30
number of shells	I	I	I	III	IIII	I

What was the most common **range** of lengths of shells Jay collected?

\_\_\_\_\_ mm

## Assessment

(c) Jay recorded his results in a bar chart.



(i) Add the missing numbers to the side of the bar chart labelled 'number of shells'.

(ii) **On the chart above**, draw the bar for the number of shells measuring 16–20 mm.

(d) Look at Jay's results and decide if each conclusion below is **true** or **false** or if you **cannot tell**.  
Tick the correct box for each conclusion.

conclusions	true	false	cannot tell
The oldest snails have the darkest shells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
He did <b>not</b> find any shells longer than 30 mm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
He found a total of eight snails.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All the snails he found are the same type.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Assessment

5. Some pupils investigated different materials used to make rucksacks. Here are some of the questions they asked.



Aysha

How strong is each material?



Phillip

How heavy is each material?



Zoe

Which material is the best?



Shaun

Which material is the most hard-wearing?

- (a) Which pupil asked a question that cannot be investigated?  
Tick the correct box.

Aysha

☐

Phillip

☐

Zoe

☐

Shaun

☐

Give a reason for your answer.

---

---

- (b) Zara took four different rucksack materials and investigated how waterproof they were.

She poured 100 cm<sup>3</sup> of water through each material in turn.  
She measured the volume of water passing through each material in 30 minutes.





## Assessment

- (i) Give **one** way of making Zara's test fair.

---

- (ii) Look at the photograph of the investigation.

Name **one** measuring instrument Zara used.

---

- (c) The table below shows Zara's results.

material	volume of water passing through each material (cm <sup>3</sup> )
A	11
B	5
C	20
D	15

Which material was the most waterproof?

Tick the correct box.

A ☐      B ☐      C ☐      D ☐

Explain your answer.

---

---

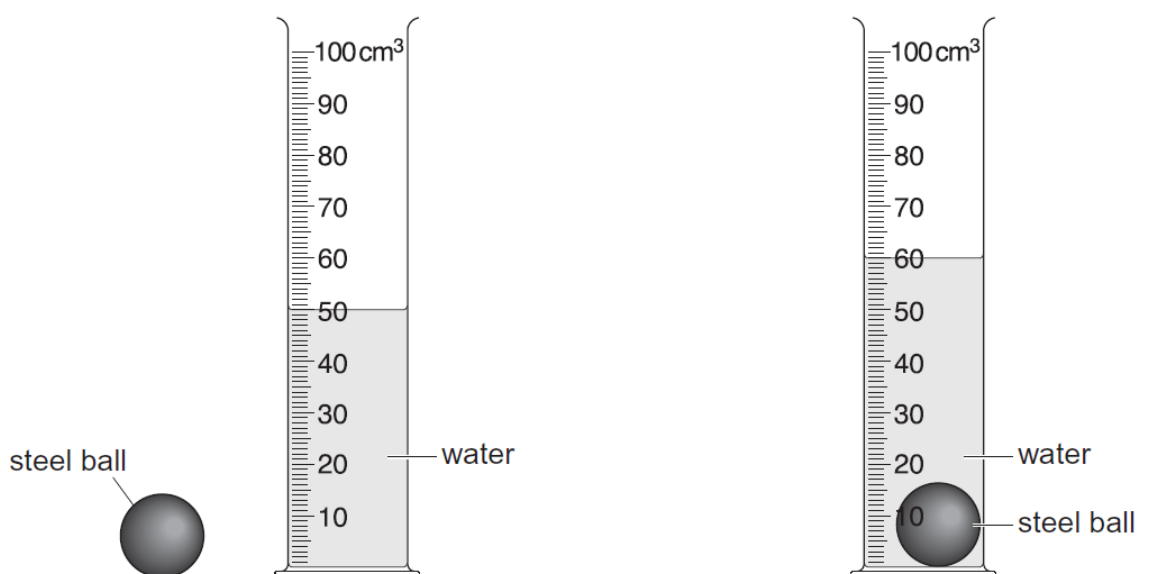
- (c) Give the letters of **two** parts that are present in plant cells but **not** in animal cells.

\_\_\_\_\_ and \_\_\_\_\_

## Assessment



Gary poured 50 cm<sup>3</sup> of water into a measuring cylinder. He then put a steel ball into the measuring cylinder.



(i) What is the new reading on the measuring cylinder?.....cm<sup>3</sup>

(ii) What is the volume of the steel ball?  
.....cm<sup>3</sup>

The table below shows the mass and volume of four objects.

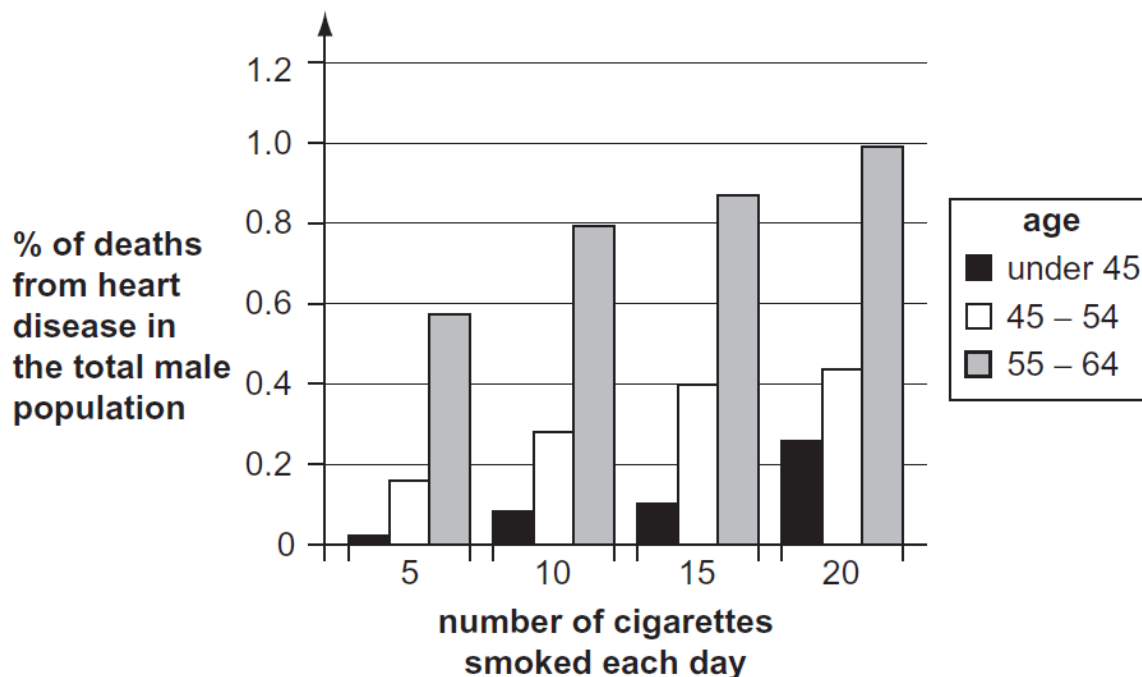
object	mass (g)	volume (cm <sup>3</sup> )
aluminium figure	230	85
lead weight	800	70
steel block	200	25
wood puzzle	400	500

## Assessment

- (i) Which object is the heaviest?
- (ii) Which object takes up the most space?

-----

**The bar chart** below shows how the number of cigarettes smoked is linked to the percentage of deaths from heart disease in the total male population.



Use the information in the bar chart to write **two** conclusions about the relationship between smoking and the number of male deaths from heart disease.

.....

.....

.....

.....

.....

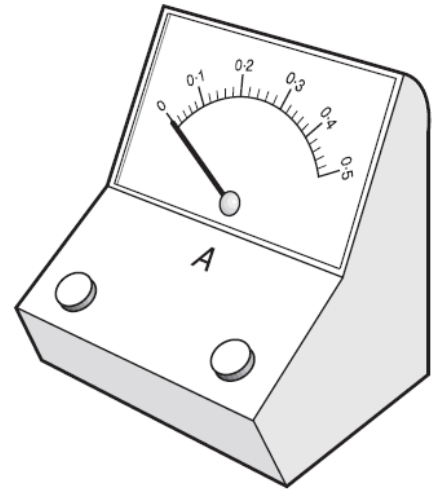
.....

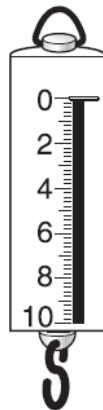
.....

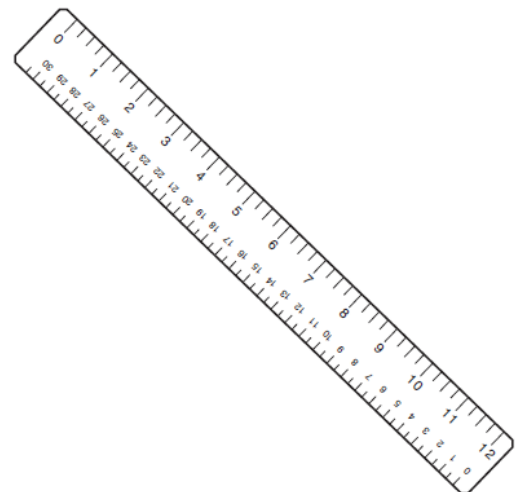
**Assessment**

- Write the correct measurement in the blank.









## Assessment

Richard wanted to find out the best conditions for growing lettuce plants



He took 4 trays and planted 8 lettuce plants in each.  
The results of his investigation are shown below.

tray	variables			number of plants alive after 7 days
	light level	air temperature (°C)	soil moisture	
A	medium	25	moist	8
B	medium	25	dry	6
C	medium	45	moist	2
D	medium	45	dry	0

Which variables did Richard **change** in his investigation?

.....  
 .....

Why is Richard **not** able to make this conclusion from his investigation?

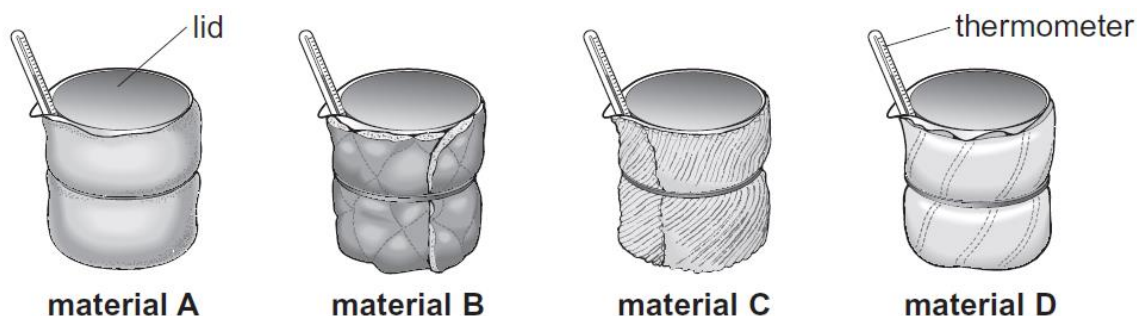
.....  
 .....  
 .....

## Assessment

9. A company has made a new material called 'Well warm'. They want to use 'Well warm' to make coats.

(a) A scientist tested 'Well warm' to see how well it insulated a beaker of hot water.

She tested 'Well warm' and three other materials as shown below.



She wrapped each beaker in a different material.

She recorded the temperature at the start and 20 minutes later.

(i) What was the independent variable that the scientist **changed**?

(ii) What was the dependent variable that the scientist **measured** during the investigation?

The results of the investigation are shown below.

time (minutes)	temperature of water ( $^{\circ}\text{C}$ ) wrapped in			
	material A	material B	material C	material D
0	60	60	60	60
20	34	40	38	36

(i) The scientist said that the 'Well warm' material is the best insulator.

Which material was 'Well warm'?

.....

(ii) Use the evidence in the results table to explain your choice.

.....  
 .....  
 .....  
 .....  
 .....  
 .....

**Assessment**

(c) The company made a coat from each of the four materials they tested.



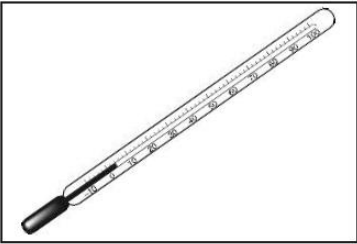
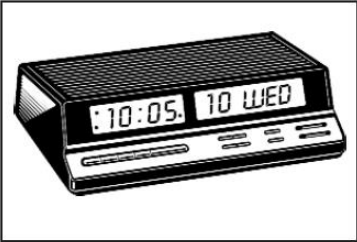
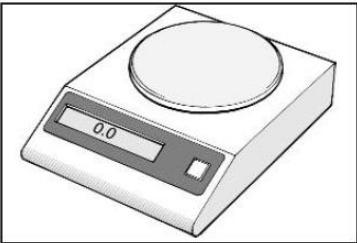
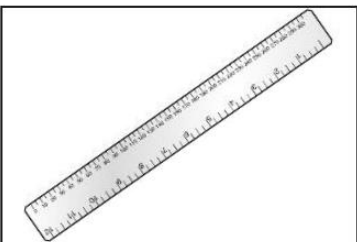
A person tested the different coats by wearing each one in a cold room. He measured the temperature inside each coat for 30 minutes. Write down two **other** variables that should be controlled to make this a fair test.

.....

.....

.....

## Assessment

equipment	measurement	unit
	measures the <b>time</b> for the experiment	cm
	measures the <b>temperature</b> of the air	°C
	measures the <b>length</b> of a plant	days
	measures the <b>mass</b> of a plant	grams

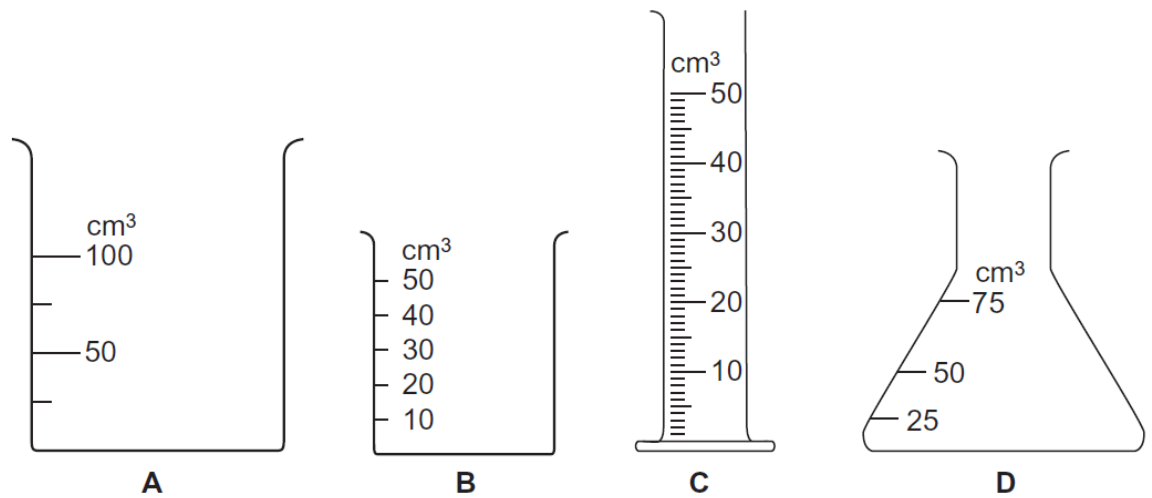
(i) Draw one line from each piece of **equipment** to the **measurement** Peter made.

(iii) Then draw one line from each **measurement** to the correct **unit**.



## Assessment

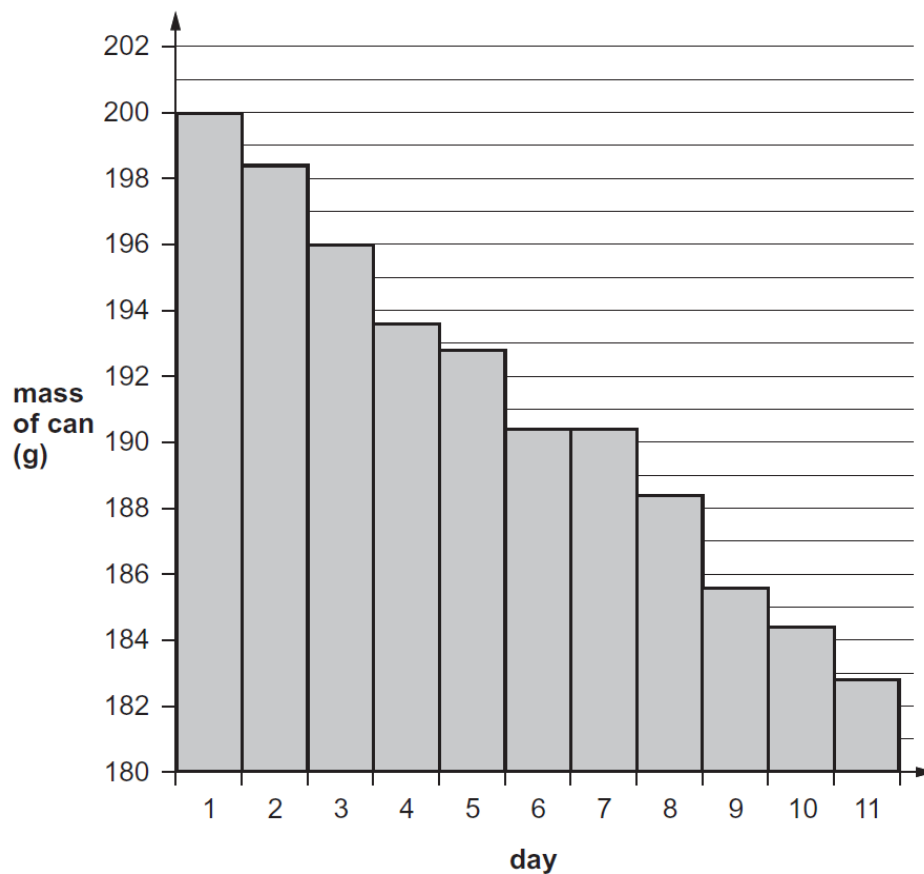
(b) The diagrams below show four measuring containers.



Which is the best container to use to measure 15 cm<sup>3</sup> of water?

Anna has a can of deodorant that she uses once each day.  
Before she uses the deodorant she measures the mass of the can.

(a) Her results are shown in the graph below.



**Assessment**

(i) What was the mass of the can of deodorant on day 1?

.....

(ii) How did the mass change as Anna used the deodorant?

.....

.....

.....

(iii) Anna did **not** use the deodorant on day 6.

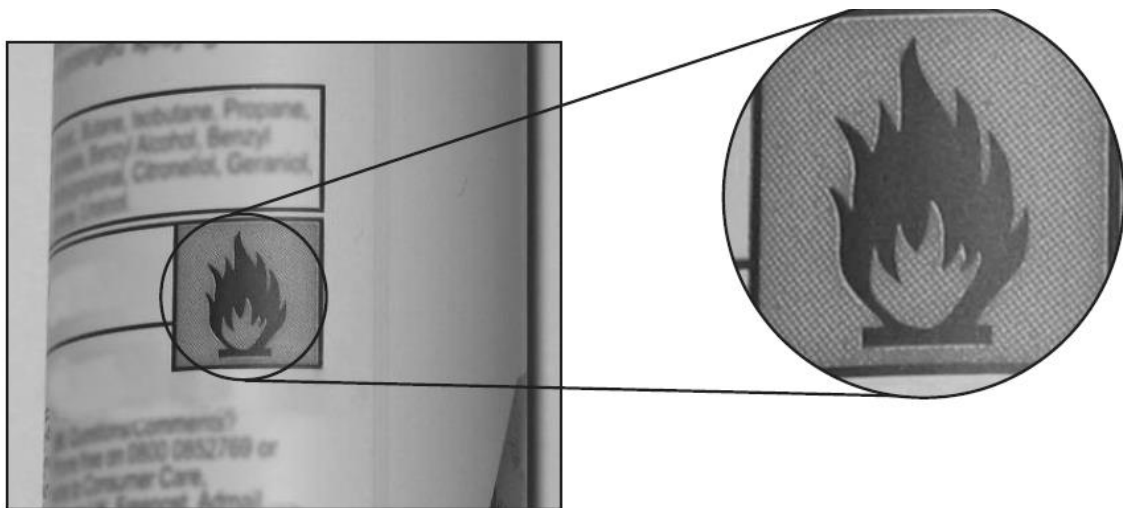
How can you tell this from the graph?

.....

.....

.....

- The deodorant can has a warning sign on it.  
What does this warning sign mean?



.....

## Assessment

Sara repeated the experiment with the water bath at different temperatures.

Her results are shown below.

temperature of water bath ( $^{\circ}\text{C}$ )	volume of dough ( $\text{cm}^3$ )	
	at the start	after 30 minutes
30	50	66
45	50	73
60	50	77
75	50	71
90	50	60

(a) Use the table of results.

What question did Sara investigate?

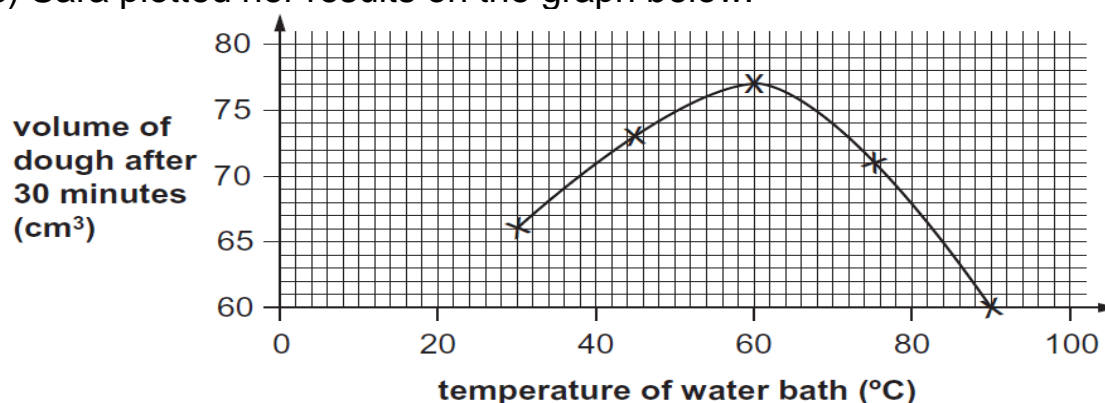
.....

(b) At each temperature Sara used dough from the same mixture.

Give **one** other way Sara made her experiment fair.

.....

(c) Sara plotted her results on the graph below.

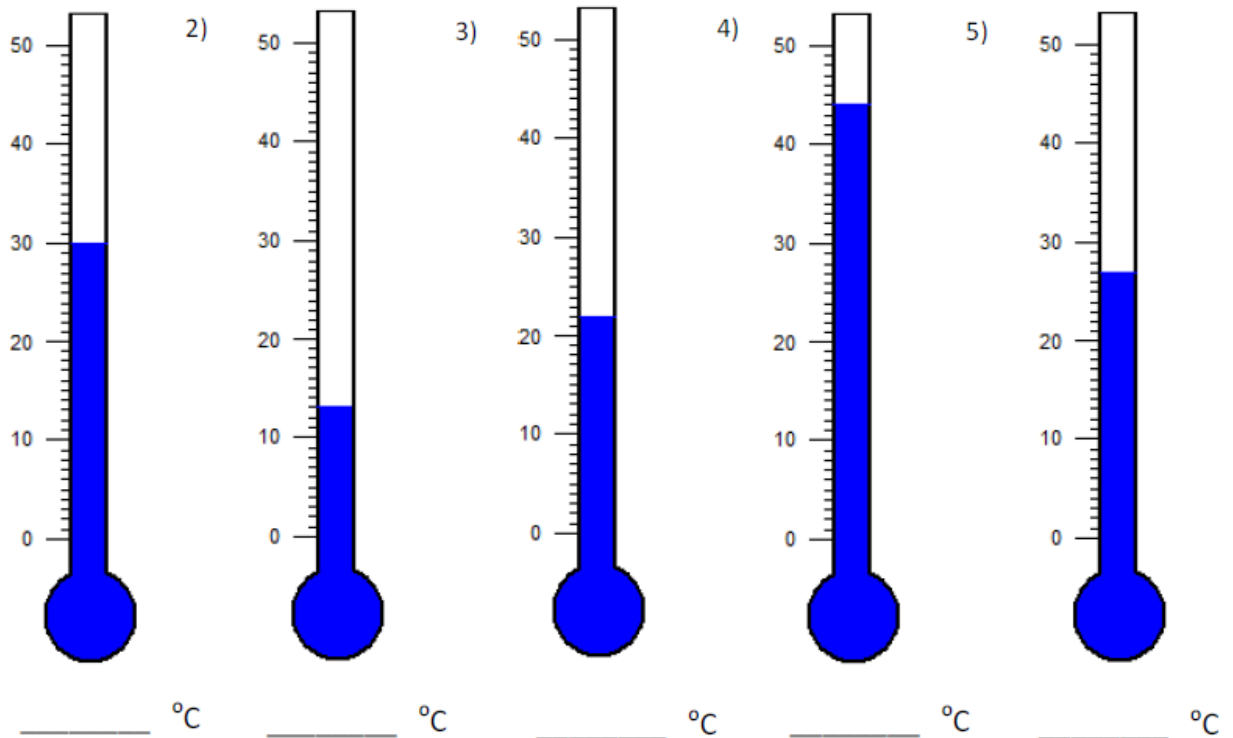


## Assessment

Describe the relationship between the variables on the graph from 30°C to 90°C. **Using the Scientific method**

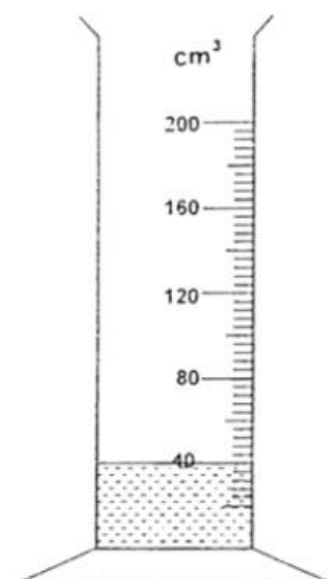

## Assessment

write the temperature shown on each thermometer:



1. Which liquid is used in the thermometer? .....

2. What word describes the differences between these cats? .....



## Assessment

- What is the reading on this measuring cylinder? .....  $\text{cm}^3$



A) Before using the Bunsen burner, I must put on .....

All loose clothing must be .....

Long hair must be .....

The Bunsen burner must be placed in the on a .....

The Bunsen burner is lit with the air hole .....

The size of the flame is controlled using the .....

3. On the following graph:

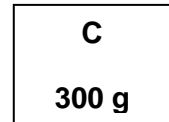
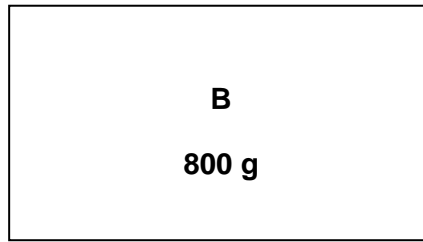
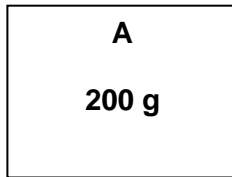


A) Which month did Steve read the most? .....

B) Which month did Steve read the least? .....

## Assessment

4. The shapes A,B,C are of different materials:



A) Which one has the largest volume? .....

B) Which one has the largest mass? .....

5. Write the name of each science tool under each:

